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ABSTRACT

This study developed and validated a conceptual framework to explore the link between faculty receptivity and resistance to innovation and change, and organizational effectiveness. The study also sought to clearly delineate the difference between receptivity, which is defined as an internal or cognitive orientation toward change, and resistance, which is defined as an external or behavioral orientation toward change. Three self-report questionnaires were developed and three others adapted to produce indices that measured: faculty receptivity and resistance to change, faculty self and organizational efficacy, faculty decision-making deprivation, perceived organizational effectiveness, and higher education departmental effectiveness. Study respondents were 799 faculty and 79 academic unit heads at 53 public Carnegie I research universities. Across all measures the study found that established, older, tenured male faculty tended to be most resistant to change, although it also found that the level of receptivity and/or resistance was innovation-specific. The study also found a correlation between faculty decision-making deprivation and faculty perceptions of organizational effectiveness. Two tables provide regression data; and an appendix contains definitions of the study variables. (Contains 40 references.) (CH)

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Faculty Receptivity/Resistance to Change, Personal and Organizational Efficacy, Decision Deprivation and Effectiveness in Research I Universities

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This paper was presented at the annual meeting of the Association for the Study of Higher Education held in Memphis, Tennessee, October 31 - November 3, 1996. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

For more than a decade American elementary and secondary schools have been the object of numerous educational reform/change initiatives prompted, in part, by calls for accountability (Cuban, 1988). Now it appears to be higher education's turn to take the brunt of policy measures fostered by a disenchanted, distrusting public (Bok, 1992; House, 1994). Retrenchment, consolidation, and downsizing are restructuring realities that have been paradoxically coupled with calls for greater productivity and program quality (AASCU, 1993; El-Khawas, 1995; Harel & Partipilo, 1996).

Accountability initiatives and lower funding levels, however, are not the only forces of change and innovation being externally imposed on the higher education community (Olsen, 1996). Newly emerging technologies (Cartwright, 1994) as well as changes in the level of academic preparation and demographic makeup of entering freshmen (Day, Astin & Korn, 1994) continue to alter traditional methods of learning in post secondary institutions. As these and other forces of change continue to inundate higher education institutions at an accelerated pace, the importance of understanding the change process in these settings has seemingly accelerated as well.

Traditionally, however, the pace of change in institutions of higher education has been slow (Barzun, 1993; Siegfried, Getz & Anderson, 1995) which may account for the comparably few analytical research efforts seeking to explain aspects of organizational behavior in institutions of higher education. Although literature describing innovation and change in higher education is voluminous, most of it seems descriptive and suppositional in nature. Only a few studies make explicit reference to systematically obtained data and/or employ theoretical orientations (Dill & Friedman, 1979).

Not unlike studies in other complex organizations, many of the research efforts that have

been undertaken are aimed at identifying and producing effective performance since it is the implicit intent of organizations to be productive. Additionally, several researchers (Firestone & Corbett, 1988; Rogers, 1983; Waugh & Punch, 1987) suggest that change processes are apt to be most well explained within a conceptual framework that includes both organizational/sociological and individual/psychological variables.

Two variables with psychological as well as sociological underpinnings that stand out in the literature are individuals' levels of receptivity to change and resistance to change. Infrequent attempts to measure receptivity in higher education settings can be explained in part by three factors which have been identified as hindering the development of an adequate theory of receptivity (Guiniguina, 1975). First, there has been an emphasis on uncovering correlates of receptivity rather than on developing models that explain relationships between these variables and receptivity (e.g. Rogers & Shoemaker, 1971). Secondly, the assumption is often made that people, and thus organizations, are inherently unreceptive to change (Coch & French, 1948; Morris & Raben, 1995), despite the fact that evidence is to the contrary (Kirkpatrick, 1985). Lastly, receptivity research is fraught with a number of conceptual and empirical ambiguities.

Key among these ambiguities are discrepancies in the literature between conceptual definitions and use of the terms receptivity and resistance. Both terms have been used to describe how an individual feels internally about a proposed innovation as well as how one acts in response to innovations being considered, introduced and/or adopted in organizations (e.g. O'Toole, 1995). This interchangeable use of the terms has further led to the assumption in some cases that there is a one-to-one correspondence between an individual's thoughts and actions, and thus if an individual possesses a high level of receptivity to change, there is automatically a low level of resistance to

change (Giacquinta, 1975). The complimentary and interchangeable nature of receptivity and resistance to change can be questioned on both conceptual and operational grounds. Receptivity might be viewed as an organizational member's internal orientation toward the proposed change which is not necessarily indicative of how the individual will actually respond to the implementation of an innovation. Resistance, on the other hand, might describe one's external orientation toward planned organizational change; the action(s) one embraces to stop, delay or otherwise undermine the successful implementation of an innovation.

Figure 1 reflects a majority of the existing organizational change literature, depicting a traditional, linear relationship between innovation, receptivity and resistance to change and organizational effectiveness in complex organizations such as institutions of higher education. The innovation, be it one of superficial/behavioral change or one which prescribes more deep seated, cultural/normative change (reflected in what is done, how it's done and who is involved in doing it) (Tierney, 1988), is introduced into the organization as either an idea, program or strategy. The nature of the innovation contributes directly to the cognitive/affective and behavioral responses observed in individual members of the organization as evidenced by the level(s) of receptivity and resistance to change which are evoked. In cases where the introduction of an innovation precipitates resistance, a variety of behavioral responses ranging from passive to active and covert to overt might be expected.

From the perspective of the Parsonian (1960) framework of organizational effectiveness (a synthesis of goal attainment and resource models) it is reasonable to expect that the behavior of the individual directly affects the level of organizational effectiveness obtained and ultimately sustained. Be it passive or active, covert or overt, it seems as though levels of receptivity and resistance to an

innovation by individual members of an organization have a direct bearing on the amount of adaptation, goal attainment, integration and latency that the organization can sustain.

While the aforementioned model has been useful, since it depicts the main concerns of the organizational change literature, it does not seem to be as complete as it could be given the multiplicity of relations thought to exist between innovations, personal variables, behavior of organizational members and organizational effectiveness. Instead, there appears to be a need to develop a more inclusive view of the innovation and change process in organizations which not only delineates linkages to organizational effectiveness but incorporates additional theories of behavior as well. For example, Fullan and Stiegelbauer (1991) advocate utilization of a "multiplicity perspective" when identifying factors affecting successful initiation and implementation of change and Fullan (1993) also indicates the need to embrace a new mind set about the concept of educational change as a way to help manage the "unknowable" that emanates from the reality that change in complex organizations is nonlinear..

Since individual's can be considered the filters through which innovations must be processed in an organizational setting....(in essence the lens through which the process refracts)....understanding how personal variables mediate this process seems of particular importance. One such variable identified in recent literature is decision-making deprivation, a construct which seems to be a key to understanding the behavior of members of organizations.

Since all formal organizations are basically decision-making structures, understanding the decision-making process seems essential for persons studying innovation and organizational change processes. Of perhaps equal importance to understanding how decisions are made within an organization is the determination of who is involved, and to what degree these individual's are

allowed to participate in the decision-making process. Several studies of the innovation and change process in organizations have concluded that extensive participation by all persons concerned in the identification and solution of organizational problems is conducive to change (Coch & French, 1948; Hage & Aiken, 1970). Similarly, Kirkpatrick (1985) posits that the most significant reason that individuals will accept or resist change is the amount of participation that they are allowed in the decision-making process.

In a more recent effort, Johnson & Ellett's (1995) findings suggest that organizationally effective schools may be schools in which discrepancies between desired and actual levels of teacher participation in decision making are in harmony. This concept of decision-making deprivation and its correlation to work alienation and organizational effectiveness is potentially useful to the analysis of innovation and change processes in higher education settings. This seems particularly the case since the current structure of decision making in these institutions is seen as an overlapping maze of competing committees and administrative offices that produce "circular decision making" and "death by terminal committee" (Lindquist, 1978 p. 25). The autonomous nature of being a faculty member implies an expected amount of participation in the decision-making and governance processes of a university. However, it may be that in this confusing, and thus frustrating structure, effective institutions are those where the desired and actual levels of faculty input into the decision-making process are found to be closely aligned and not where decentralization is greatest.

Another personal variable that seems to be key to understanding the behavior of members of organizations is efficacy. During the past two decades the primary conceptualizations of human efficacy are associated with the works of Bandura (1977; 1982; 1993). Self-efficacy is posited as an important self-perception construct that mediates linkages between cognition and behavior.

Bandura's (1977) theoretical framework distinguishes efficacy expectations from outcome expectations. He defines outcome expectancy as an individual's estimate that a given behavior will lead to certain outcomes while efficacy expectation is explained as the belief that one can successfully execute a behavior required to produce the outcomes. Efficacy expectations thus "determine how much effort people will expend and how long they will persist in the face of obstacles and aversive experiences. The stronger the perceived self-efficacy, the more active the efforts" (p.194).

PURPOSE

The primary purpose of this paper is to describe the development, piloting and initial large-scale validation of a conceptual framework designed to explore and further explicate linkages between faculty receptivity and resistance to innovations and change and organizational effectiveness in higher education settings. A secondary purpose of the paper is to conceptually clarify the meaning of change in higher education settings with particular emphasis on clearly delineating the difference between receptivity and resistance toward innovations. (See Appendix A for a list of conceptual definitions used in this study). In addition, the paper describes the development of three instruments (to measure faculty receptivity to change, faculty resistance to change and academic unit head perceptions of organizational effectiveness), and the adaptation to higher education contexts instruments designed to measure decision-making deprivation and faculty self and organizational efficacies in a test of the conceptual framework.

METHODOLOGY

A post hoc correlation research design was used as a framework for data collection and analysis in the study. Thus, relationships among the variables were explored (rather than

manipulated) in an attempt to develop an understanding of linkages among variables in the study. In the initial framework, receptivity and resistance to change were conceptualized as independent variables and faculty and academic unit head perspectives of organizational effectiveness were conceptualized as dependent variables. Efficacy and decision-making deprivation were considered faculty, personal characteristic variables thought to mediate receptivity and resistance to change and organizational effectiveness.

Target Population for the Study

The target population for the study was all faculty from five traditional departmental units at all 59 Carnegie Public Research Universities I in the United States. Psychology, Sociology, Political Science and two academic units within each College of Education were selected for inclusion in the study. In all, a total of 266 academic units were identified as being part of the target population. From this target population, 108 academic units with a total of 2671 faculty members representing a total of 53 Public Research Universities I agreed to voluntarily participate in the study.

Instrumentation/Measures

A faculty questionnaire consisting of five self-report measures was used for data collection. An academic unit head questionnaire consisting of a single self-report measure was also developed for use in this study. The six measures included in the study are described below.

Inventory of Receptivity to Change in Higher Education (IRCHE)

The original version of this instrument (Clarke, Ellett & Rugutt, 1995) was designed to measure college and university faculty receptivity to cultural/normative change (CNC) and superficial/behavioral change (SBC). The 71-item measure was a modification of the Receptivity

to Change Inventory (RCI) which was used and developed by Hennigar (1979) to assess attitudes of middle management administrators (e.g., school principals and assistant principals) . Each item on the modified, 20-item version of the IRCHE used in this study is a suggestion of a change in university policy, rules, conditions, etc. for which the faculty member's support is being requested(e.g, "a policy proposed to provide equal weight to research/publication and teaching in all future tenure and promotion decisions"). Respondents make judgements about each IRCHE item using a four-point Likert scale ranging from *I definitely **would not** support the proposed policy* to *I definitely **would** support the proposed policy.*

Faculty Resistance to Change Inventory (FRCI)

This instrument was designed to measure the degree to which a faculty member will oppose the implementation of a policy once adoption of the policy becomes highly likely. The five-item Likert scale employed in this measure was developed in a pilot study of 99 faculty members at a Research I institution. These faculty were asked to rank order eight forms of resistance in response to the question, "When you think about possible changes or innovations that might affect you as a faculty member, whatever they might be, which of the following forms of resistance to change do you see as the weakest? strongest?" Respondents identified the weakest form of resistance as: *Stay to oneself. Don't attend meetings at which the innovation/change is to be discussed.* The strongest form of resistance identified by the faculty respondents was: *Either singularly or with one or more colleagues, initiate a public display/protest against the innovation/change (i.e., letter to the editor, placard demonstration, etc.).* By adding the option *I would not resist the policy in any way*, the resultant 5-item resistance scale was designed to measure the degree of resistance (from no resistance to strong resistance) that faculty members would take in response to the *highly likely* implementation

of policies proposed in the 20-item IRCHE.

Faculty Self and Organizational Efficacy Assessment (FSOEA)

The two-part FSOEA was developed specifically for this study based upon the prior work of Loup (1994) and Ellett (1995). Part I was used to assess faculty beliefs about energy and persistence to accomplish goals, respond to obstacles/barriers, and to persist in the face of repeated failure. Part II was used to assess faculty beliefs about effecting organizational outcomes related to teaching (student learning), research (scholarship) and service.

Part I of the FSOEA was completed by respondents considering each of three key questions, reflective of Bandura's (1977) motivational concepts, in relation to perceived personal efforts and collective efforts of other faculty toward accomplishment of three types of goals (enhancement of the quality of teaching and student learning; the quality of research and scholarly productivity; and the quality of service to the university, community, and profession). For each of the three key questions faculty were asked to make two decisions: 1) how they would respond in trying to accomplish the goal and 2) how most other faculty in their department would respond in trying to accomplish this goal. The five-point Likert response scale for Part I of the FSOEA varies from: 1 (*Little or No [Effort, Persistence, Increased Effort]*) to 5 (*Lots of [Effort, Persistence, Increased Effort]*) for each different key question as it relates to each of the three organizational goals.

Faculty were asked in Part II of the FSOEA to reflect on what they believe are the major goals of their department with regard to each of three areas: teaching, research and service. Respondents were then asked to assess the professional knowledge and skills that they possess, as well as the amount of personal responsibility and the degree of success that they have in accomplishing their department's goals in each of the three areas. In addition, ratings are made on

these items for perceptions of all *other* faculty member's in a particular academic unit. A four-point Likert scale is provided for each of the questions. Rating of professional knowledge and skills ranges from 1 *(Typically Inadequate)* to 4 *(Highly Adequate)*; rating of responsibility to accomplish the department's goals ranges from *1(No Responsibility)* to 4 *(a Large Amount of Responsibility)*; and rating of success in accomplishing academic unit goals ranges from 1 *(No Success)* to 4 *(a High Degree of Success)*. A total of 18 measure judgements were made on Part II of the FSOEA.

Faculty Decision-Making Deprivation Scale (FDDS)

The instrument used to measure the difference between desired and actual levels of decision making was the Faculty Decision Making Deprivation Scale (FDDS), a modified version of the School Decisional Participation Scale (SDPS) originally developed by Alutto & Belasco, (1973, 1972), further modified by Bacharach (1990), and more recently modified by Johnson (1991). The FDDS consisted of 15 items representing decisions typically made concerning various aspects of teaching, research and service at universities (e.g, "textbooks/teaching materials I use" and "budgeting departmental funds"). Using a four-point Likert scale, respondents were asked to first indicate their level of *actual participation* in the decision-making process and then to indicate their level of *desired participation* for each item. The scale ranged from 1 *(Never)* to 4 *(Always)*. Subsequently, two initial scores were calculated: 1) an *actual* participation score; and 2) a *desired* participation score. A third calculation was used to determine levels of *decision-deprivation*. This index was calculated by subtracting the actual from the desired level of decisional participation.

Index of Perceived Organizational Effectiveness (IPOE)

The modified IPOE is an 8-item measure adapted for use in higher education settings. Faculty members are asked to rate the effectiveness of their department along four dimensions:

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quantity/quality of product (teaching, research and service), efficiency, adaptability and flexibility. Respondents respond to each item by selecting from among five alternatives that range in value from 1 to 5. These options portray an individual's judgment of the degree to which the department attains objectives and accomplishes tasks defining the four key organizational functions described above. This measure is derived from a questionnaire refined by Mott (1972) which was initially developed for use in hospital settings by Georgopoulos and Mann (1962) in an attempt to construct a valid measure of organizational effectiveness.

Higher Education Index of Departmental Effectiveness (HEIDE)

The HEIDE is a 15-item measure developed specifically for this study. Like the IPOE, the HEIDE is derived from Parson's (1960) conceptual framework that contends in order for a social system to grow and develop, four organizational functions are essential: adaptation, goal attainment, integration and latency. Respondents are asked to rate faculty in their academic unit with regard to the role of research, the role of teaching and the role of service on each of five items reflecting faculty adaptability, flexibility, efficiency, and quantity and quality of production. For each item, respondents select from among four alternatives which indicate a perceived level of attainment for each of the organizational functions. For example, adaptability is rated from a low of *not very adaptable* to a high of *very adaptable*.

Data Collection Procedures

Academic unit heads who had agreed to participate in this study were mailed a package which included the following: instrument packets for each of the full-time members of their faculty; a set of reminder notices to be distributed approximately ten days following the distribution of the faculty instruments; an academic unit head packet; and, a cover letter summarizing the tasks and

time lines requested of them.

The faculty instrument packet contained a cover letter (which explained the study procedures/time lines and emphasized the voluntary/anonymous nature of faculty participation), electronically scannable (bubble sheet), data collection forms which included a demographic information section as well as the IRCHE, FRCI, FSOEA, FDDS, and IPOE; and, a preaddressed, business reply envelope. The academic unit head packet included a supplemental information form, a copy of the machine scoreable, data collection packet distributed to the faculty; and, a preaddressed, business reply envelope. Academic unit heads who had agreed to participate in this study were mailed instrument packets during the first week of February, 1996 for each of their full time faculty members. Receipt of completed instruments continued through mid-March.

Data Analyses

Upon the completion of data collection procedures and the construction of data analysis files, a variety of data analyses were completed: 1) descriptive statistical analyses of all demographic and instrument items as well as composite variables; 2) factor analyses of four of the six instruments; 3) internal consistency (Cronbach Alpha) reliability analyses of subscales and/or total scores of all instruments; 4) bivariate correlations among all instrument subscales and instrument totals; 5) multiple regression analyses to examine the relative contribution and combination of variables explaining variance in the departmental organizational effectiveness measures; and 6) one-way and multiple-way ANOVAs to make comparisons among various demographic variables for the variables measured as well as to compare item responses to selected measures.

A statistical index was computed to define a standard for judging differences between sub-group means in the t-test comparisons made. This standard reflected differences between group

means that were a minimum of .33 standard deviation units of the raw score standard deviations of the total sample for the particular variable used in the t-test comparison between groups.

RESULTS

Useable data were received from 799 faculty and 79 academic unit heads from 103 academic units representing 53 universities. Just over 65% of the faculty respondents were male while white respondents comprised 91.3% of the sample. A total of 33.3% of the faculty respondents belonged to academic units in Colleges of Education, 26.8% came from Psychology, 24.5% from Sociology while the fewest responses (15.4%) came from faculty in Political Science. Nearly half of the respondents (48.1%) were 50 years of age or older. Almost all (90.0%) of the respondents had obtained a Ph.D. with another 7.2% having earned an Ed. D. A total of 45.2% of the faculty participating in the study held the rank of Full Professor, nearly all (94.1%) were members of the Graduate Faculty and the majority (72.3%) were tenured. Only 3.9% of the faculty respondents were not tenured or hired on a tenure track. More than half (52.8%) of the faculty respondents had been employed as a faculty member in higher education for at least fifteen years. Likewise, 44% had spent at least fifteen years employed at their present institution. A similar total (42.7%) had only been employed at one institution of higher education while nearly three-fourths of the respondents (73.9%) had been employed at no more than two institutions.

A variety of descriptive statistics was computed which provided a number of interesting findings. For example, 62.7% of the faculty respondents indicated that they would likely support a policy that would "provide equal weight to research/publication and teaching in all future tenure and promotion decisions". Likewise, only 13.6% of faculty respondents would be likely to support a policy to "eliminate tenure for all faculty members," 52.9% would be likely to support

the development of "a set of productivity indicators to compare higher education institutions with one another" and 82.5% expressed support for a policy that would "give faculty the primary responsibility for selecting college level administrators (i.e. Department Heads/Deans)".

Extensive factor analysis procedures were completed for four of the measures utilized in the study. Multiple factor structures emerged for each, accounting for 27.8 to 55.7 percent of the variance in the various solutions. By way of summary, the following structure for each measure emerged: 1) Inventory of Receptivity to Change in Higher Education (IRCHE); 3 factors: Receptivity to Superficial/Behavioral Change, Receptivity to Cultural/Normative Change (Academic Focus) and Receptivity to Cultural/Normative Change (Procedural Authority), 2) Faculty Resistance to Change Inventory (FRCI); 4 factors: Resistance to Increasing Authority, Resistance to Superficial/Behavioral Change (Required), Resistance to Superficial/Behavioral Change and Resistance to Cultural/Normative Change, 3) Faculty Self and Organizational Efficacy Assessment (FSOEA-I) (motivation); 3 factors: "My" Efficacy, "Other Faculty" Efficacy (Research) and "Other Faculty" Efficacy (Service), 4) Faculty Self and Organizational Efficacy Assessment (FSOEA-II) (outcomes); 3 factors: Other Faculty Outcomes (Teaching/Research/Service), "My" Outcomes (Teaching/Service) and "My" Outcomes (Research), 5) Faculty Decision-Deprivation Index (FDDI): 2 factors: Organizational Issues and Personal Issues. For a detailed review of the multiple-factor analyses see Clarke (1996).

One-factor solutions for each of the measures were also computed. These represented global, uni-dimensional measures of the study's variables (receptivity to change/RECEP; resistance to change/RESIST; efficacy motivation/EFFMO; outcomes efficacy/OUTEFF; decision-deprivation/DECDEP). The percentage of variance explained by the one-factor solution for each

of the measures used in the study ranged from 11.6% (RECEP) to 30.9% (EFFMO).

Cronbach Alpha internal consistency reliability coefficients were computed for all measures/subscales (IRCHE, FRCI, FSOEA-I, FSOEA-II, FDDI) as well as one-factor solutions used in the study. One-factor solution Alpha coefficients were as follows: RECEP=.59, RESIST=.78, EFFMO=.87, EFFOUT=.80 and DECDEP=.82. Alpha coefficients for the measures of organizational effectiveness were: IPOE=.88 and HEIDE=.89.

Bivariate correlations among the one-factor solutions for the various measures were also computed. Four of 10 correlations were statistically significant and these ranged from r= .20, p<.05 (RECEP/EFFMO and RESIST/DECDEP) to r=.67, p<.001 (EFFMO/OUTEFF). In addition, the correlation between RECEP and DECDEP was r= .50, p<.001. *Interestingly, intercorrelations between the uni-dimensional measures for receptivity to change and resistance to change were negligible (r = -.12).* Using academic unit means as the units of analysis, the intercorrelation between RECEP and RESIST was not statistically significant (r = .07).

Intercorrelations were also computed between the one-factor solutions and the study's two measures of organizational effectiveness. Four of five intercorrelations between the one-factor solutions and the Index of Perceived Organizational Effectiveness (IPOE) were statistically significant and ranged from r= -.39, p<.001 (DECDEP) to r= .58, p<.001 (OUTEFF). The intercorrelations between both uni-dimensional measures of efficacy and the Higher Education Index of Departmental Effectiveness (HEIDE) were statistically significant; EFFMO/HEIDE r= .40, p<.001 and OUTEFF/HEIDE r= .39, p<.001.

In order to determine how, and in what combinations, the study variables predict organizational effectiveness in higher education settings, a series of multiple regression analyses

regressing both of the dependent variables (IPOE and HEIDE) on the one-factor solutions and subscales of the independent variable measures (IRCHE, FRCI, FSOEA, FDDS) were computed. Results of the multiple regression analyses completed for the IPOE (dependent variable) and the one-factor solutions (independent variables) showed that four of the five uni-dimensional measures made significant contributions to the resulting regression equation. Table 1 summarizes the results of this analysis. OUTEFF, the uni-dimensional measure for outcomes efficacy, was the first variable to load in this regression ($r = .58$, $F = 51.33$, $p<.0001$). This perception of outcomes efficacy accounted for 34% of the total variance among academic units in perceived organizational effectiveness as measured by the IPOE. One-factor solutions, DECDEP and EFFMO, each accounted for an additional 9% of the variance and RECEP accounted for an additional 4%.

Multiple regression analyses completed for the HEIDE (dependent variable) and the one-factor solutions (independent variables) indicated that the only significant variables to enter into the resulting regression equation were the measures for efficacy motivation and outcomes efficacy (EFFMO; $r=.40$, $F= 14.86$, $p<.001$, and OUTEFF; $r=.43$, $F= 8.66$, $p<.01$). EFFMO accounted for 16% of the variance while OUTEFF added another 3%. Table 2 reports the results of this analysis.

A series of t-tests and factorial analysis of variance (ANOVA) procedures were completed using selected faculty and academic unit demographic variables to determine whether or not there weredifferences among levels of these variables (gender, tenure status, age, faculty rank, academic unit type, years employed in higher education as a faculty member, and level of primary teaching assignment) and faculty receptivity to change, faculty resistance to change, motivation and outcomes efficacy, decision-making deprivation and organizational effectiveness. Additional t-tests and ANOVA procedures were completed toexamine differences between selected demographic variables

and individual items on the receptivity to change and resistance to change measures.

Among the more interesting findings from these t-test and ANOVA procedures were the following:

- Older faculty are more likely than young faculty to be resistant to change.
- Faculty employed in higher education for less than 10 years are more apt to have a higher level of decision-deprivation than colleagues who have worked in higher education settings for more than 20 years.
- Female respondents are more likely to be receptive to change than their male counterparts.
- Tenured faculty are apt to be less receptive to change than non-tenured faculty.
- Full professors are less likely to be receptive to change than either associate or assistant professors.

Findings of interest between selected demographic variables (age, gender, faculty rank and tenure status) and individual items on the receptivity to change and resistance to change measures include:

- Tenured faculty are apt than non-tenured faculty to strongly resist a policy that would insure that all faculty advise an equal number of students.
- Female faculty are more receptive than their male counterparts to a policy that would require all students to take a course designed to enhance multi-cultural awareness.
- Assistant professors are more likely than full professors to be receptive to a policy that would design a grant writing and publication preparation workshop for all faculty to attend.
- Older faculty are more likely to be receptive than young faculty to a policy that would set limits on the amount of outside consulting that faculty members can do for pay.

DISCUSSION AND IMPLICATIONS

This study utilized the development of three original measures and the adaptation of three others to higher education settings to assist in the validation of a conceptual framework designed to explore and further explicate linkages between faculty receptivity to change, faculty resistance to change and organizational effectiveness. A total of 799 faculty and 79 academic unit heads from 53 public Research Universities I returned useable data, and though the response rate (30% from faculty; 73% from unit heads) was not as high as desired (but rather as expected), a number of interesting results were nonetheless obtained.

Central to the study was the desire to clearly delineate the difference between receptivity and resistance toward innovation and thus conceptually clarify the meaning of change in higher education settings. Results of the study showed that given the way these variables were measured, receptivity and resistance to change are not to be understood as depicted in the traditional change literature (as polar opposites with a one-to-one relationship). Rather, when receptivity is viewed as a faculty member's internal (cognitive) orientation toward a proposed change and resistance is viewed as one's external (behavioral) orientation toward planned organizational change, intercorrelations between the uni-dimensional measures for receptivity and resistance were negligible.

Results also support the premise that a faculty member's level of receptivity and/or resistance is innovation specific. For instance, one might be very receptive toward providing equal weight to research/publication and teaching in all future tenure and promotion decisions, but be very unreceptive to eliminating tenure for all faculty members. Likewise, a faculty member's resistance toward two separate policies that they "definitely would not support" might result in staying to

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oneself in response to one, yet initiating a public protest against the other. Perhaps as a result of this continual ebb and flow of cognitive and behavioral responses to the introduction of innovations, neither of these personal variables exhibited the strength of relation to organizational effectiveness as either of the other two variables in the study; decision deprivation and efficacy.

Like levels of receptivity and resistance, results derived from faculty responses to perceived *actual* and *desired* amounts of participation in the decision-making process indicated that resultant *deprivation* was item specific. For example, faculty's lowest level of deprivation (M=.04) was in response to decisions concerning "departmental social activities" while the highest level of deprivation (M=.72) was registered concerning decisions related to "budgeting departmental funds" and "allocation of departmental resources (i.e. support staff, student workers, equipment use, etc.)". More importantly, however, to the conceptual clarification of change in higher education settings is the relationship between this variable and organizational effectiveness.

Of particular interest were results that show that faculty and administrators (academic unit heads) view the role of decision-making quite differently in terms of its impact on the effectiveness of the academic unit. The uni-dimensional measure of decision-making deprivation correlated negatively with both the faculty measure of organizational effectiveness (IPOE) (r= -.39) and the academic unit head's measure of organizational effectiveness (HEIDE) (r= -.08). Though both administrative and faculty vantage points suggest that the greater a faculty member's decision-making deprivation, the lower one's perception of the academic unit's effectiveness is apt to be, it is evident that academic unit heads are less likely to view a "decisionally deprived" faculty member as adversely affecting organizational effectiveness. This difference in perception suggests that efforts to clarify and understand the decision-making structure within a given department might well

benefit enhancing effectiveness. It further appears that an academic unit head should be sensitive, not arbitrary, when including faculty member's in the decision-making process. Taking time to learn which member's of the faculty wish to be included in specific decision-making activities (that may or may not be of interest to other faculty) would seem to be time well spent.

The two uni-dimensional measures of efficacy unquestionably provided the strongest links to organizational effectiveness. Since previous studies employing the self-efficacy construct in higher education settings have typically been confined to student persistence and achievement (Peterson, 1993) and/or to attitudes of individual's toward technological innovation (Pajares and Miller, 1994) the strength of the relations provided in the results of this study between efficacy and organizational effectiveness suggests a unique avenue of investigating higher education faculty in the future.

Unlike recent studies in public school and social work settings, however, the results from this study do not confirm the existence of a sense of "collective" efficacy amongst higher education faculty. Loup (1994) determined that public school teachers differentiated between personal efficacy and organizational efficacy and further identified a "collective" sense of efficacy that existed when the organization was faced with perceived failure. Though the perceptions of social workers in Ellett's (1995) study differed slightly from teachers in terms of differentiating between the personal ("Me") efficacy and the organizational ("Thee") efficacy, the collective ("We") sense of efficacy still held together. The patterns of efficacy from this study are not nearly as clear. Perceptions of personal and organizational efficacy are in existence, but they seem to vary with regard to faculty perceptions of the roles of teaching, learning and service. The notion of collective efficacy in higher education settings is not apparent in this study.

The lack of congruity in the findings of these studies seems to indicate that personal and organizational efficacy are embedded in the organizational context. In other words, if a common efficacy measure could be developed, one would suspect that the organizational context would still influence the perspective of personal and organizational efficacy. For example, the existence of a strong sense of collective efficacy in public schools can begin to be explained as follows: teacher autonomy is high; the setting provides for a great deal of opportunity for informal interaction between teachers; there are highly structured work parameters (i.e. 7:30am - 3:00pm work hours; dress codes); there is a diverse clientele; and, there is a common sense of values (e.g. student learning). In essence, there is a strong link to "who we are and what we do around here".

On the other hand, higher education faculty also have a high degree of autonomy, but the work setting seems drastically different from public schools. For instance, the common sense of values is broadened as research and service are added to student learning as primary roles; unstructured work parameters and a propensity for faculty to possess "eccentricities" is commonplace; clientele are apt to be much less diverse and there may or may not be opportunities for informal interaction among the member's of an academic unit. In other words, the difference in the contextual setting seems to offer an explanation for a lack evidence of collective efficacy in higher education academic units.

Given the results of the study, and the recent findings that link "strong" culture to organizational effectiveness in higher education settings (Smart & St. John, 1996), it seems as though a case to prioritize the development of personal and organizational efficacy (and perhaps even collective efficacy) can be made to academic unit heads intent upon improving their unit's effectiveness. For example, giving faculty assistance in overcoming obstacles and barriers as well

as providing them with experiences to develop personal and organizational belief systems that reinforce accomplishing departmental goals as they relate to teaching research and service (e.g. mentoring with another faculty member) would seem to be of greater value than attempting to determine whether or not a new policy will be met with resistance.

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FIGURE 1

A Traditional change model: Linking Innovation to Organizational Effectiveness

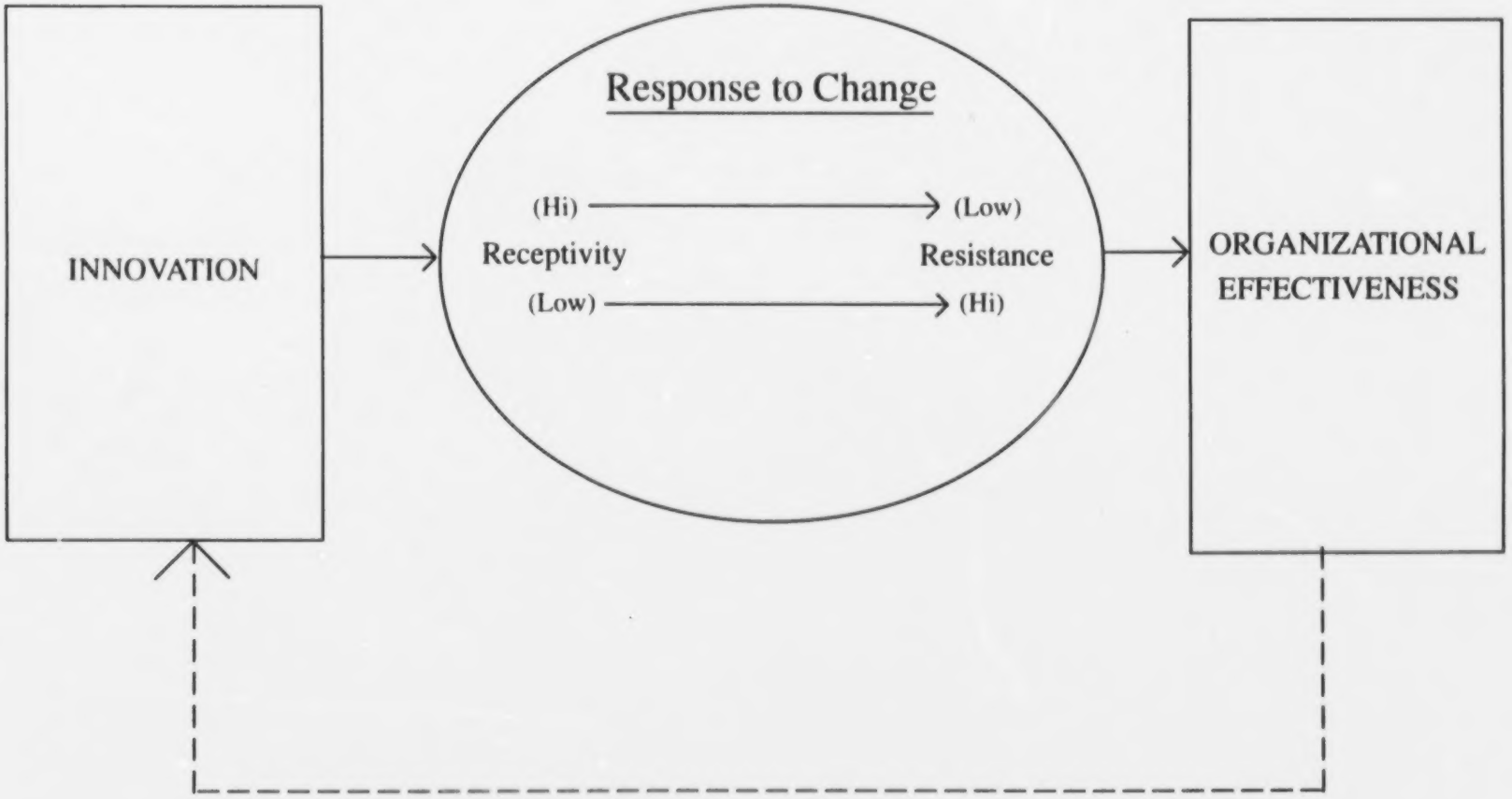

Figure 1

TABLES 1 & 2

Table 1
Summary of Stepwise Multiple Regression Analyses Regressing IPOE on One-factor Solutions of the IRCHE, FRCI, FSOEA I&II, and FDDI
(n=103)

Step	Variable	R	R^2	ΔR^2	F	p
1	OUTEFF	.58	.34	---	51.33	.0001
2	DECDEP	.65	.43	.09	36.97	.0001
3	EFFMO	.72	.52	.09	35.58	.0001
4	RECEP	.74	.56	.04	30.97	.0001
5	RESIST[a]	---	---	---	---	.15

[a] RESIST entered at step five was not statistically significant $p>.05$

Table 2
Summary of Stepwise Multiple Regression Analyses Regressing HEIDE on One-factor Solutions of the IRCHE, FRCI, FSOEA I&II, and FDDI
(n=79)

Step	Variable	R	R^2	ΔR^2	F	p
1	EFFMO	.40	.16	---	14.86	.0002
2	OUTEFF	.43	.19	.03	8.66	.004
3	DECDEP[a]	---	---	---	---	.15
4	RECEP[b]	---	---	---	---	.15
5	RESIST[c]	---	---	---	---	.15

[a] DECDEP entered at step three was not statistically significant ($p>.05$)
[b] RECEP entered at step four was not statistically significant ($p>.05$)
[c] RESIST entered at step five was not statistically significant ($p>.05$)

APPENDIX A

Conceptual Definitions of the Study Variables

CONCEPTUAL DEFINITIONS

Independent Variables

Receptivity to Change: Receptivity to change is a belief state or trait of an individual that has strong cognitive and affective components. It is the degree to which an organizational member is able or ready to accept, or adopt a particular change or innovation (Chauvin, 1992). In this study receptivity to change includes a faculty member's readiness or internal orientation toward planned organizational change and does not necessarily dictate how the faculty member may actually act in response to university change efforts. Receptivity to change includes the full range of internal orientation along a continuum from strong receptivity (i.e., definitely would support the proposed innovation) to strong negative receptivity (i.e., definitely would not support the proposed innovation).

Resistance to Change: Resistance to change is observable behavior of individuals that is an evident response in opposition to an innovation. Resistance to change is defined as the degree to which a faculty member will oppose an innovation once it has been implemented. Unlike receptivity to change, resistance to change describes the faculty member's external orientation toward organizational change; the action(s), both overt and covert, that one embraces to stop, delay or otherwise undermine the successful implementation of an innovation.

Decision-Making Deprivation: Decision-making deprivation is a need state of an individual that has both cognitive and affective elements that vary in intensity depending upon the level of harmony and/or disharmony between one's desired level and actual level of one's decision-making power. Decision-making power is to be understood in terms of degree of input (participation) in the decision-making process. Individuals, therefore, whose actual participation in decision-making

matches their desired level of participation are considered to be in a state of equilibrium in which decision-making deprivation is minimal. Likewise, the greater one's level of decision-making deprivation (a state of disequilibrium), the greater the need to return to a state of equilibrium.

Decision-making deprivation is defined in this study as the difference between the actual level of university decision-making power a faculty member possesses and the level desired. The greater the difference between desired and actual levels of decision-making, the greater is one's level of deprivation. It should be noted that although actual levels of participation in decision-making may be an important perspective to explore, this study is concerned with the level of equilibrium/disequilibrium that exists between desired and actual levels of a faculty member's university decision-making power.

Efficacy: Efficacy is a psychological construct that has both affective and cognitive components. Posited by Bandura (1977) as an important self-perception construct that mediates linkages between cognition and behavior, efficacy expectation is the personal belief that one can successfully execute a behavior required to produce desired outcomes. Efficacy expectation is a major factor in determining the choice of activities, the level of effort to be expended and the length of time one will sustain effort in dealing with stressful situations. The stronger the perceived self-efficacy the more active are the efforts of the individual.

In this study, efficacy is viewed from the two perspectives reflected in Bandura's (1977) theoretical framework which differentiates between efficacy expectations and outcome expectations. Efficacy expectation is described as the belief that one can successfully execute a behavior required to produce outcomes. In other words, efficacy expectations depict the amount of effort an individual will put forth as well as how long one will sustain the effort in the face of obstacles and unpleasant

experiences. Outcome expectancy, on the other hand, is defined as an individual's estimate that a given behavior will lead to certain outcomes; an assessment of one's competence to accomplish a goal.

Dependent Variable:

Organizational Effectiveness: Organizational effectiveness is a broad based construct that refers to the extent to which an organization accomplishes a variety of organizational goals/outcomes. In this study organizational effectiveness is defined as the extent to which faculty members are able to establish and accomplish institutional goals in a manner that is efficient, adaptable, and flexible to the needs of the organization and that ensures a high quantity and quality level of organizational product.